



IV.

planning assumptions



REGIONAL SETTING

The SCAG Region is vast, encompassing 38,000 square miles and equal in size to the state of Ohio. Covering six counties and 184 cities, this is by far the largest and most populous metropolitan planning region in the nation. Moreover, the SCAG Region includes nearly half of the entire population of the State of California. The Region is loosely divided into 14 subregions and is one of the largest concentrations of employment, income, business, industry and finance in the world. The Gross Regional Product (GRP) for the Region would rank Southern California as the 12th largest economy in the world, while the state as a whole has an equivalent of the 6th highest Gross Domestic Product (GDP) in the world. An understanding of a number of factors relating to the regional setting are central to the development and finalization of the 2001 RTP. These factors include:

- ▀ Population, employment and household growth
- ▀ Transportation demand, Baseline investments and the role of transit
- ▀ Transportation and air quality conformity

POPULATION, EMPLOYMENT AND HOUSEHOLD GROWTH: BASELINE CASE

Population estimates for 2020 predict fewer people in the SCAG Region than estimated in the 1998 RTP (21.3 million vs. an original estimate of 22.3 million). However, by 2025 population in the SCAG Region is projected to grow to 22.6 million people. The Region's forecasted number of jobs in 2025 will be just under 10.0 million, which is an approximate 43 percent increase in jobs from 1997, yet about 600,000 fewer jobs than forecast for 2020 in the 1998 RTP. Incorporating the results from a two-year local input and review process, Table 4.1 shows the 2001 RTP Baseline growth forecast of population, employment and household for the Region.

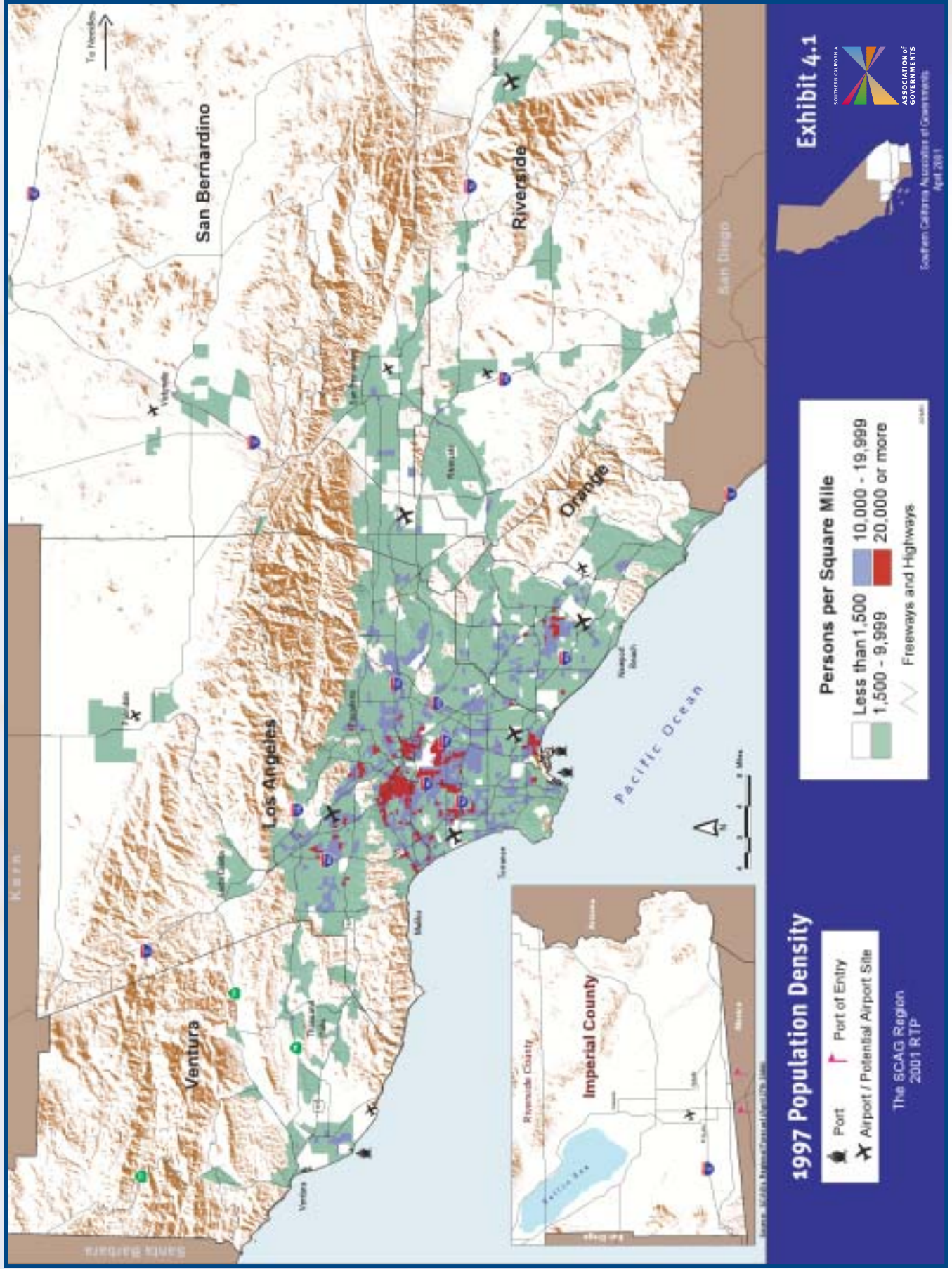
The composition of the Region's population is also changing. Demographic projections show that the SCAG Region's population growth will come almost exclusively from two groups—Hispanics and Asian/Pacific Islanders. In fact, Hispanics' share of the regional total population is projected to surpass that of non-Hispanic whites by the year 2003, and will reach 51 percent by 2025. Another significant trend is the “graying” of the population, as the first members of the Baby Boom generation are approaching their mid-50s. In the SCAG Region, the share of elderly persons—aged 65 and above—will rise to 15.4 percent in 2025, from 9.9 percent in 1997, assuming current residents retire within this Region.

Table 4.1

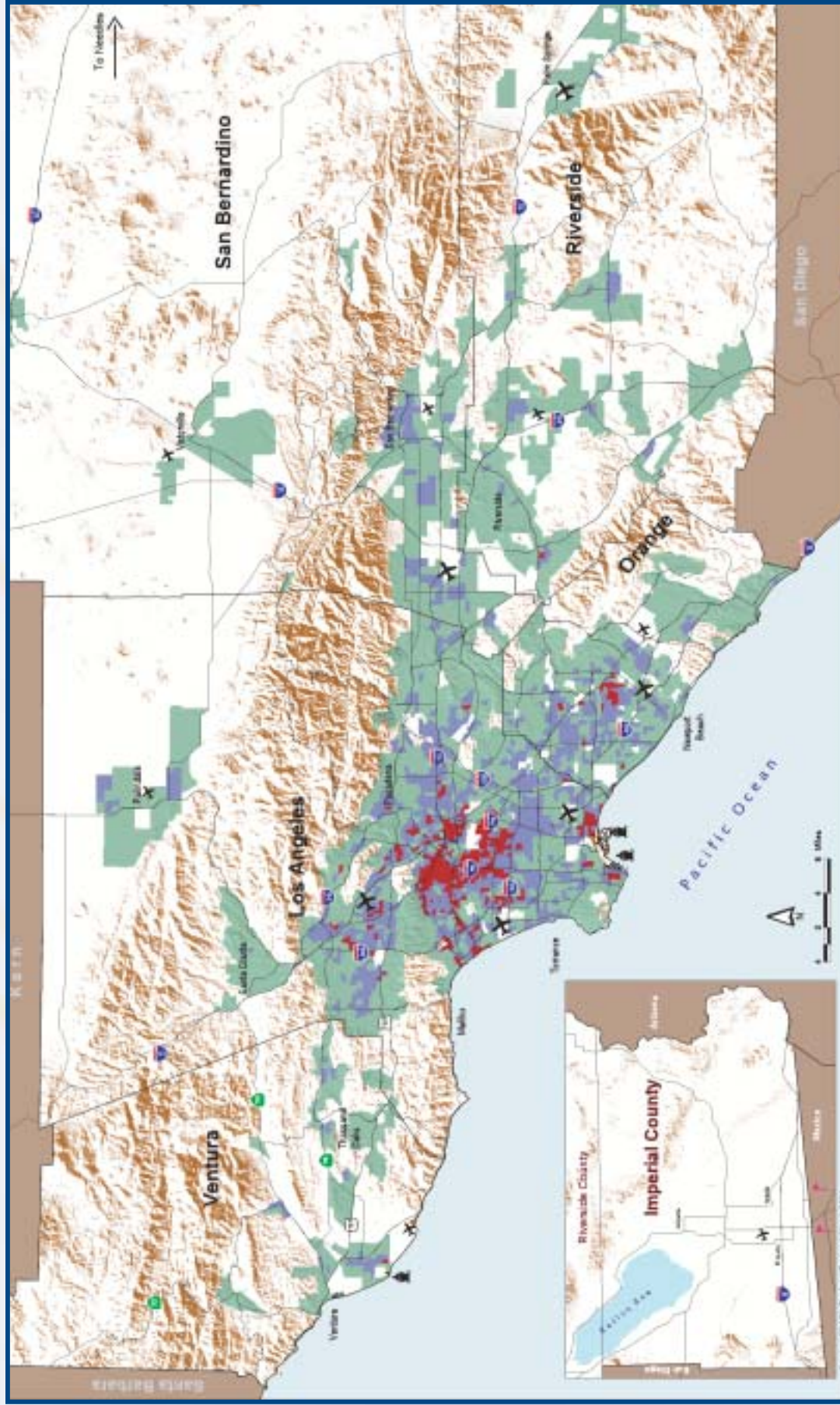
2001 RTP FINAL BASELINE POPULATION, EMPLOYMENT & HOUSEHOLD FORECAST (IN THOUSANDS)								
	1997	2000	2005	2010	2015	2020	2025	% Change 1997 to 2025
Population	16,137	16,845	17,988	19,066	20,069	21,316	22,644	40%
Employment	6,971	7,416	8,107	8,779	9,200	9,572	9,952	43%
Households	5,201	5,402	5,674	6,081	6,468	6,912	7,418	43%

Source: Final 2001 RTP Baseline growth forecast, reflects input and review from all local jurisdictions (city and subregion)

1997 Population Density



2025 Population Density



2025 Population Density

- Port
- Port of Entry
- Airport / Potential Airport Site

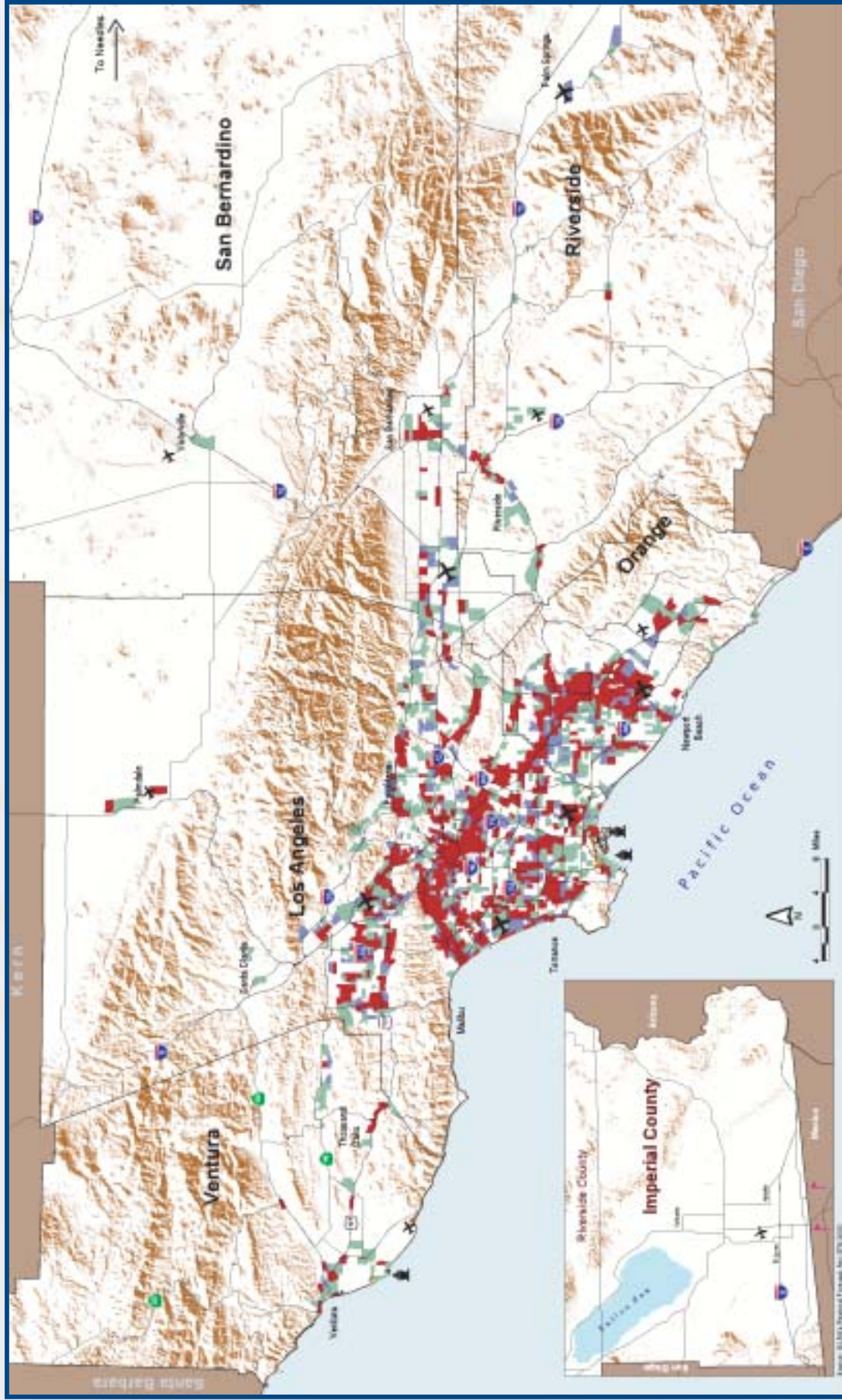
The SCAG Region
2001 RTP

Exhibit 4.2





1997 Employment Density





 Port  Port of Entry
 Airport / Potential Airport Site

Jobs per Square Mile

Less than 2,000 3,000 - 4,000
2,000 - 3,000 4,000 or more

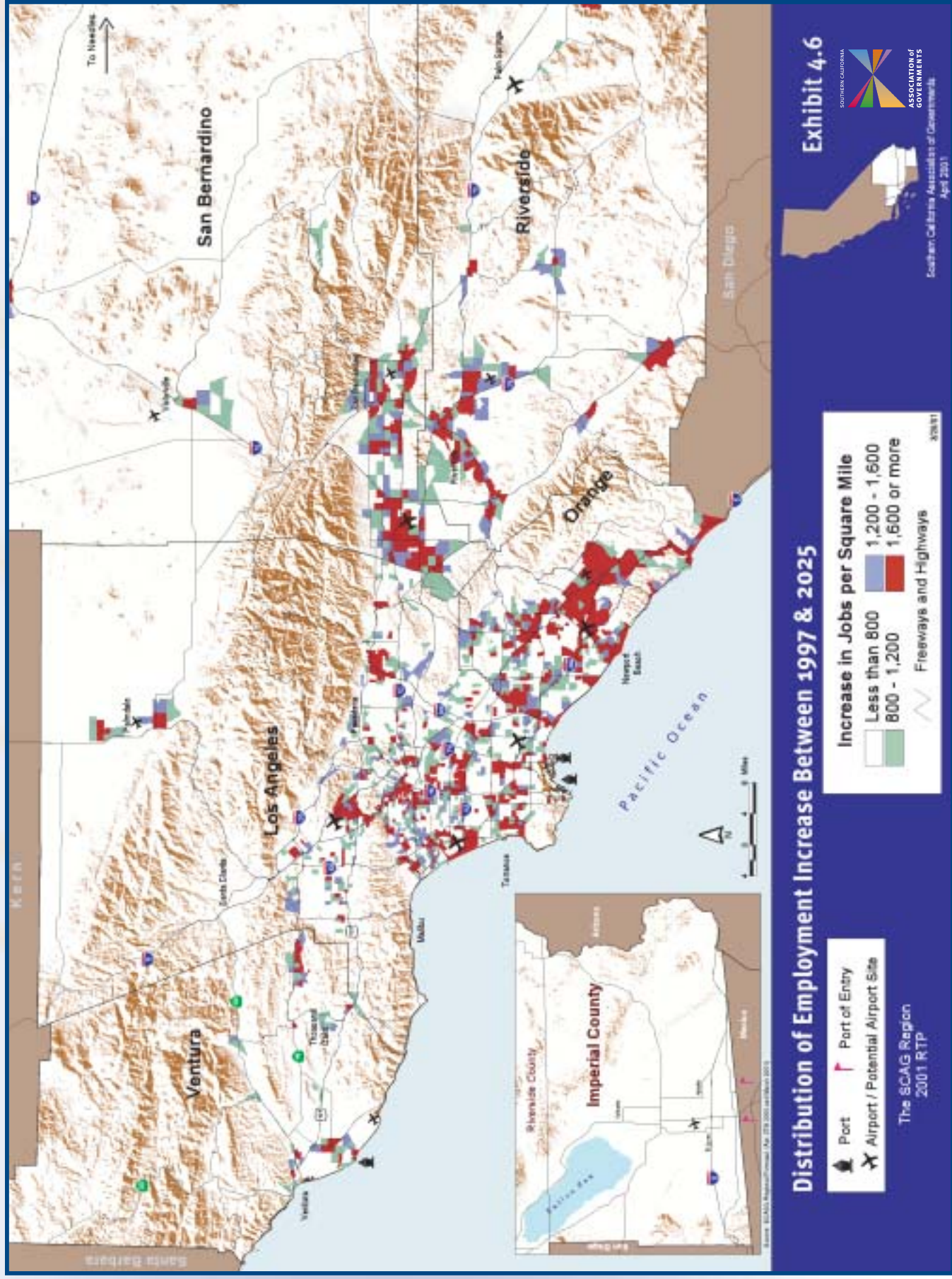
Freeways and Highways

Exhibit 4.5



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Southern California Association of Governments
April 2011

Distribution of Employment Increase Between 1997 & 2025



Finally, the emerging Internet economy and e-commerce will also affect almost every aspect of key regional planning variables, modeling tools and travel behavior. This technology can potentially affect land-use patterns, air quality, traffic congestion and local sales tax revenue as consumer and travel behavior changes. These trends—population and job growth, aging population and e-commerce—pose unprecedented challenges and uncertainties in the development of the 2001 RTP.

POPULATION, EMPLOYMENT AND HOUSEHOLD GROWTH: THE POLICY CHOICE

The 2001 RTP Baseline growth scenario presented earlier is a consensus forecast, derived from sound technical analysis of historical trends and through extensive local input and review process. These Baseline population, employment and household forecasts are considered to represent an unconstrained future growth scenario, not limited to any infrastructure constraints. Thus, the RTP medium aviation scenario—assuming all airports are not constrained and will be able to expand to meet regional aviation demand (also projected from Baseline growth)—is considered to be closest to the Baseline condition.

After reviewing the RTP Preliminary Environmental Impact Report and further aviation impact analysis, a preferred alternative—Scenario 8—was recommended by TCC for adoption. Since the final RTP aviation—Scenario 8—shows very different regional airport-system capacity configurations and associated passenger and cargo trip distributions from those under the RTP medium aviation scenario, it affects the distribution of the 2025 Baseline forecast of population, employment and household. The new growth distribution resulting from implementation of Aviation Scenario 8 would represent a definitive policy choice made by the Region in terms of growth patterns. Table 4.2 presents the 2001 RTP growth forecast based on this policy choice (Aviation Scenario 8) and relative differences from baseline growth figures.

Table 4.2

2001 RTP FINAL POPULATION, EMPLOYMENT AND HOUSEHOLD GROWTH IN 2025: BASELINE AND POLICY FORECAST (IN THOUSANDS)									
	Baseline Forecast			Policy Forecast-Aviation Scenario			Difference (Policy minus Baseline)		
	Population	Household	Employment	Population	Household	Employment	Population	Household	Employment
Imperial	318	98	94	318	98	94	0.0%	0.0%	0.0%
Los Angeles	12,338	4,119	5,291	12,277	4,098	5,259	-0.5%	-0.5%	-0.6%
Orange	3,416	1,068	2,044	3,431	1,073	2,053	0.4%	0.5%	0.4%
Riverside	2,834	934	1,006	2,856	942	1,014	0.8%	0.9%	0.8%
San Bernardino	2,787	890	1,086	2,821	901	1,104	1.2%	1.2%	1.7%
Ventura	951	309	432	940	306	428	-1.2%	-1.0%	-0.9%
SCAG Region	22,644	7,418	9,952	22,644	7,418	9,952	0.0%	0.0%	0.0%

Source: Baseline forecast—incorporating inputs and reviews from all cities and subregions. Policy forecast—growth redistributions among counties based on air passenger and cargo allocations specified by the adopted Aviation Scenario 8 regional airport configurations.

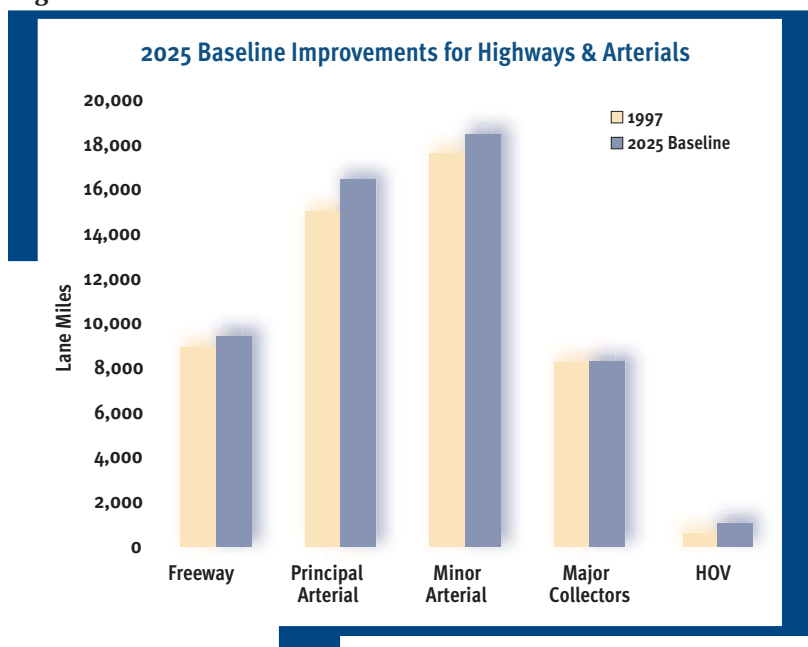
As indicated in Table 4.2, the 2001 RTP Scenario 8 caused some minor shifts of future growth from Los Angeles County to Orange County and Inland Empire. Relatively speaking, the job/household ratio for the two inland counties combined shows improvement. Therefore, the adoption of the 2001 RTP Scenario 8 would result in more balanced growth and bring positive impacts on congestion.

Red and blue areas shown in Exhibits 4.1 and 4.2 suggest a high growth rate. The worst congestion and slowest speeds are forecast for urban red areas and for the transportation corridors that link Los Angeles and Orange County urban centers with the blue areas in rural or outlying counties. For rural or outlying counties, if jobs do not follow population, the greater the change or percentage increase in population, the greater the strain on the transportation infrastructure.

TRANSPORTATION DEMAND AND BASELINE INVESTMENTS

During the 1950s and '60s, freeways and highways were constructed; during the '70s, these freeways and highways were widened and new lanes were added; and during the '80s and '90s, construction focused primarily on adding High-Occupancy Vehicle (HOV) lanes and building rail facilities. Figure 4.1 summarizes the increase in highway network miles that the Region is committed to funding and building in our Baseline investments between 1997 and

Figure 4.1



2025. Our Baseline investments include all committed projects in the 2000 Regional Transportation Improvement Program (RTIP), Governor's Traffic Congestion Relief Program for which the county commissions have committed matching funds and the TEA-21 priority projects for capital improvement as identified by the county commissions. The regionally significant Baseline projects are shown later, in Section V in Exhibit 5.3. A complete list of the Baseline projects is included in the Technical Appendix.

HOV lanes and rail will continue to be built, but the other facilities, though expanding slightly, will not keep pace with the expected 40 percent population growth. As can be seen in the congestion

delay maps (Exhibits 5.1 and 5.4 in Section V), the future transportation system is expected to be overwhelmed by new demand. With massive congestion and air quality problems projected, it is critical that the \$24.5 billion available for new projects in the Regional Checkbook be spent on those that perform best. The congestion maps graphically indicate the levels of congestion that the Region experiences today and may face in the year 2025.

Recently, the Region has seen a substantial increase in transit ridership—16 percent between 1995 and 1999. Transit ridership, though still representing a vital component of our transportation network, has steadily decreased as a percentage of all daily trips. Prior to 1995, the Region's transit ridership declined in absolute numbers, from a high in 1985 to an all time low in 1995, representing a loss of 100 million riders. The Region is just now approaching the previous ridership peak level of 1985. Many people continue to depend on reliable transit service to participate in the economic, cultural and social benefits of Southern California. An enormous challenge that we face is to deliver and improve transit service to provide both the transit-dependent population and discretionary riders with more effective and attractive service. This will be absolutely essential if we hope to retain or improve the transit mode share.

TRANSPORTATION AND AIR QUALITY CONFORMITY SETTING

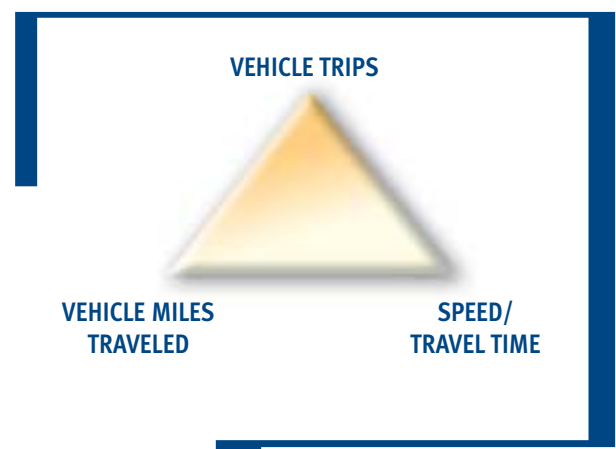
Under federal regulations and in federally designated non-attainment and maintenance areas, regional transportation plans, programs and projects must comply with the requirements of the CAA as reflected in the Transportation Conformity Rule. The Environmental Protection Agency (EPA) may designate as a federal “non-attainment area” any area that has not met the CAA health standards for one or more pollutant.

Air Basins and Air Districts in the Region

Transportation conformity analyses are based on the federal non-attainment areas and are usually described by the respective air basin(s) geography. Currently, the SCAG Region contains four air basins that are administered by five air districts as follows:

- ▶ The South Coast Air Basin (SCAB) covers the urbanized portions of Los Angeles, Orange, Riverside and San Bernardino counties and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD).
- ▶ The Ventura County portion of the South Central Coast Air Basin (SCCAB) covers Ventura County and is within the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD).
- ▶ The Mojave Desert Air Basin (MDAB) covers the desert portions of the Los Angeles, Riverside and San Bernardino counties. A small portion of this air basin is in Kern County, outside of the SCAG Region. The SCAG portion of this air basin is under jurisdiction of three air districts:
 - Mojave Desert Air Quality Management District (MDAQMD) administers portions of the MDAB situated in San Bernardino County and the eastern part of Riverside County. The Riverside County portion is known as the Palos Verdes Valley area.
 - SCAQMD administers a portion of the MDAB in Riverside County that is situated between the Salton Sea Air Basin (SSAB) and the Palos Verdes Valley area.
 - Antelope Valley Air Pollution Control District (Antelope APCD) administers the Los Angeles County portion of the MDAB.

Figure 4.2
Major Determinants of Mobile Source Emissions



- ▶ The SSAB covers the entire County of Imperial and the eastern desert portion of Riverside County. This air basin is under the jurisdiction of two air districts:
 - Imperial County Air Pollution Control District (ICAPCD) administers the Imperial County portion of the SSAB.
 - SCAQMD administers the Riverside County portion of the SSAB situated between the SCAB and the MDAB.

Criteria Pollutants

Transportation activities, particularly motor vehicle (on-road mobile sources), are major causes of air pollution. Four criteria pollutants (those for which the EPA has established health standards) are subject to air quality conformity for the RTP and the RTIP:



- ▶ Carbon monoxide (CO) is a product of automobile exhaust. CO reduces the flow of oxygen in the bloodstream and is particularly dangerous to persons with heart disease.
- ▶ Ozone is formed by the reaction between volatile organic compounds (VOC) and Oxides of Nitrogen (NO_x) in the presence of sunlight. Ozone negatively impacts the respiratory system.
- ▶ Nitrogen dioxide (NO₂) is created under the high pressure and temperature conditions in internal combustion engines. It impacts the respiratory system and degrades visibility due to its brownish color.
- ▶ Particulate matter less than 10 microns in size (PM₁₀) are tiny particulates of dust and soot that cause irritation and damage to the respiratory system.

Federal Non-attainment Areas

The boundaries of the federal non-attainment areas and their respective attainment years in the SCAG Region are as follows:

- ▶ **SCAB (excluding Banning Pass)**
The entire basin is a non-attainment area for the following pollutants. Each pollutant attainment year is cited [in brackets]: CO [Yr. 2000], 1-hour Ozone [Yr. 2010], NO₂ [Yr. 1995] and PM₁₀ [Yr. 2006].
- ▶ **Ventura County Portion of SCCAB**
The entire county is a 1-hour Ozone non-attainment area (attainment year 2005).
- ▶ **Antelope Valley Portion of MDAB**
The entire desert portion of Los Angeles County (known as Antelope Valley) is a non-attainment area for 1-hour Ozone (attainment year 2007).
- ▶ **San Bernardino County Portion of MDAB**
With the exception of the northern and eastern parts of the county, the rest is a 1-hour Ozone non-attainment area (attainment year 2007).

The desert portion of San Bernardino County contains two PM₁₀ non-attainment areas:

- ▶ **Searles Valley**, situated at the northwest corner of the County—with attainment year of 1994.
- ▶ **The rest of San Bernardino County within the MDAB**—with attainment year of 2000.
- ▶ **Riverside County Portion of SSAB**
The entire Riverside County portion of SSAB (known as Coachella Valley—including Banning Pass) is a non-attainment area for the following pollutants [attainment year]: 1-hour Ozone [Yr. 2007] and PM₁₀ [Yr. 1995].

Applicable SIP (Emissions Budgets and TCMs)

The 2001 RTP must conform to the applicable SIPs [emissions budgets and the Transportation Control Measures (TCMs)]. The U.S. Court of Appeals' March 2, 1999 ruling in *EDF v. EPA* mandated that only those emissions budgets approved or found adequate for conformity determinations by EPA can be used for the regional emission analyses. The applicable TCMs are those approved by EPA. For the 2001 RTP conformity determinations, the applicable emissions budgets and TCMs are established in the following SIPs:

- ▶ **Ozone SIPs**—The emissions budgets established in the 1994 ozone (1-hour standard) SIPs for the Antelope Valley of MDAB, the San Bernardino County portion of MDAB, the Coachella Valley portion of SCAB and the Ventura County portion of SCCAB function as the applicable emissions budgets for conformity analysis. The emissions budgets established in the 1999 ozone SIP (1-hour standard) for SCAB function as the applicable emissions budgets for conformity analysis.
- ▶ **Nitrogen Dioxide (NO₂) SIP**—The emissions budgets established in the 1997 NO₂ SIP (Maintenance Plan) for SCAB function as the applicable emissions budgets for conformity analysis.

For detailed information, see the Transportation Conformity Report included in the Technical Appendix.